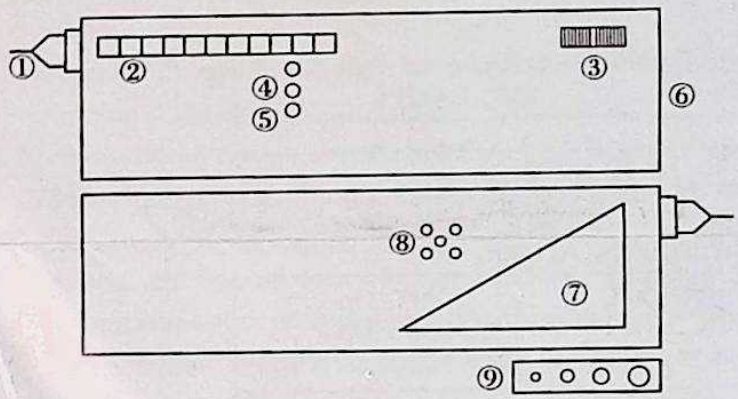
DIAMOND SELECTER Ⅱ
INSTRUCTION MANUAL

(Synthetic Moissanite Not Distinguishable)



SPECIFICATIONS

Model : DSⅡ-861
Power source : DC006P 9V × 1
Accessories : Testing Platform for loose stones, Vinyl case, Battery 006P 9V × 1
Net weight : 103g

INDICATION OF THE PARTS

① Probe
② Level Meter
③ Power Switch/Level Meter Volume
④ Battery Lamp
⑤ Ready Lamp
⑥ Battery Compartment
⑦ Electricity Conductive Panel
⑧ Alarm Speaker
⑨ Testing Platform for loose stones

PREPARATION

1. When operating Diamond Selector Ⅱ, use battery type 006P 9V.
   Lid of the Battery Compartment ⑥ can easily be slid off by pushing it in the direction of arrow.
2. Align + & – mark on the battery (included in the kit) to the Battery Hook and attach. Insert hooked battery into the Battery Compartment with the hooked part facing the lid side of the compartment. Then, put the lid back.
3. Turn the Power Switch ③ ON.
4. Confirm the Battery Lamp ④ lights up. Also at this time, Level Meter" will light up and this lighting signal will shift from left to right and vice versa two times.
   ※ In cases when the Battery Lamp does not light up or it becomes dim, new battery is required ; replace the battery with a new one.
5. Wait for about 30 seconds till the Ready Lamp ⑤ lights up.
   ※ The Ready Lamp⑤ will automatically light up as soon as the Probe ① is warmed up to the prescribed temperature
6. The Power Switch ③ functions as the Volume Control to adjust Level Meter ②. By turning it toward ON direction, the Level Meter Lamp will light up from Green, Yellow, to Red in order.
7. Now, the preparation is complete and Diamond SelectorⅡ is ready for measuring.

Adjustment of Level Meter ②

Please adjust the Level Meter ② in accordance with the size of the stones to be measured and also the ambient temperature. This adjustment is critical and the most important condition in the measurement.

※ In cases when the number of lights in the Level Meter " is not conformed to the size of the stone or ambient temperature, accurate measurement can not be obtained. So, please refer to the following chart and make accurate adjustment.

GREEN LAMPS				YELLOW LAMPS				RED LAMPS					
1	2	3	4	5	6	7	8	▶DIAMOND					

[AMBIENT TEMPERATURE]

Ct. Temp.	10℃ Down 50°F Down	10℃-30℃ 50°F-85°F	30℃ Up 85°F Up
0.05ct.Down	5	6	7
0.06ct.~ 0.5ct.	3	4	5
0.6ct.Up	1	2	3

◇ For the stone sizes up to 0.05ct., set the Level Meter Lamp to light on until 6.

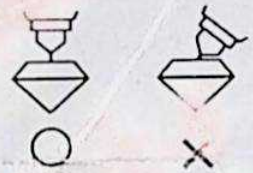
◇ From 0.06ct. to 0.5ct., set the Level Meter Lamp to light on until 4.

◇ Over 0.6ct., set the Level Meter Lamp to light on until 2.

For example, when testing stone approx. 0.3 carat size,

In colder temperature, set the Level Meter Lamp to light on until 3.

In warmer temperature, set the Level Meter Lamp to light on until 5.



OPERATION

1. Gently apply the Probe tip ① to the stone to be tested.

In order to prevent Probe tip from bending or breaking, please do not apply the tip as shown in the illustration ×.

Please apply the tip as shown in illustration ○.

INTERPRETING THE INDICATION

DIAMONDS	1. Beeping sound (beep-beep-beep) 2. 1~4 of the Red Lamp box of the Level Meter ② will light on. (More no. of Red Lamp boxes will light up for bigger sized stones.)
DIAMOND SIMULANTS (Except Synthetic Moissanite)	1. No Beeping sound. 2. No Red Lamp boxes will light on. Green and/or up to Yellow Lamp boxes may light on depending on the type of simulants.)
METAL ALERT	1. Continuous buzzing sound. (The thermal conductivity of the metal is very high and can give the same indication as a Diamond with most Thermal Probes. The Diamond Selector II has a Metal Alert buzzer to warn you when the Probe tip touches metal.) If you hear the Metal Alert buzzing sound, re-touch the Probe tip so as to touch only the tested stone.

OBSERVATION

1. Before starting the test, wash the stone cleanly.
   Oil and dirt dull the sensitivity of the Diamond SelectorII.
2. All the tests must be done by your bare hands.

If your hands have very dry skin or you put on your gloves, the Metal Alert will not function since normal moisture level of your hands is necessary for operation.

3. Hold the Diamond Selector Ⅱ so that your fingers touch the Electricity Conductive Panel ⑦ on the back of the unit.
4. In case of stones set in metal (rings, pendants, bracelets, watches, etc.), hold the metal part of with your bare hands.
5. In case of loose stones, place the tested stone on the Testing Platform ⑨, then hold the Diamond Selector Ⅱ in one hand and the Platform with your other hand.
6. When testing stones continuously for a long period of time, check periodically and make sure that the Level Meter Lamp remains on at the correct position (certain number of the lights mentioned on the Calibration Chart remains on) as well as the Battery Lamp ④ is on.
7. If you hold the ring with your bare hand for a long time in order to test a lot of meleed stones (very small size stones) set in it, the ring is warmed up by your body temperature and accordingly it may dull the sensitivity of the Diamond Selector Ⅱ, so sometimes be sure to leave the ring apart until it gets its normal temperature.
8. Avoid use in front of cooling/heating source of fan, or direct strong wind as they may affect indication.
9. In case of testing the stone which has been kept in the extreme low or high temperature, start the test after it gets its normal temperature.

MAINTENANCE

1. After use, always turn off the Power Switch ③, keep it in the attached vinyl case and avoid dust and humidity.
2. Since the Diamond Selector Ⅱ is constructed by the precise electric circuits, never attempt to open anything except the lid of the Battery Compartment ⑥.
3. In case of not using the Diamond Selector Ⅱ for a long time, take out the battery from the unit since the battery may be sometimes corroded.

SYNTHETIC MOISSANITE SEPARATION METHOD

(To distinguish synthetic moissanite from natural diamond)

Since the degree of thermal conductivity of synthetic moissanite is at the same level as natural diamond, Diamond Selector Ⅱ can not distinguish synthetic moissanite from natural diamond. However, following the orders below, separation can easily be performed.

① Currently, all synthetic moissanite has yellow ~ pale green color. Please compare the stone with natural diamond of G color degree (Preferably PT platform).
Since the color difference should be obviously distinguishable, this will be a contributing hint to throw doubt on the stone.

② Please perform the Doubling Test.
Under the microscope or by using 10X loupe, by looking into the culet (Observe culet from 45 degree angle) through the facet of the stone, double cut line will be observed.

③ Please use Nite Tester (Sold separately) to distinguish. Nite Tester will react only to synthetic moissanite.

< Regarding Diamond Simulants Available in the Present Market >

Along with the advances in Technology, synthetic gems of the same chemical contexture as the natural gems and artificial gems made of synthetic mineral substance which do not exist in the natural resources are being produced. Currently 'Synthetic moissanite' is being marketed and the users are confused.

CZ	GGG	YAG	White Spinel	Rutile
Strontium titanate			Lithium ninobate	
Lithium tantalate				

Remarks

1) Since the degree of thermal conduction of 'Synthetic moissanite' is at the same level as natural diamond. Diamond SelectorⅡ can not distinguish synthetic moissanite from natural diamond and result in responding the same way as in the case of diamond. So, please pay full attention.

2) Also, since zircon (Natural and Synthetic) and achromatic corundum have better thermal conductivity compared to the simulants indicated in the square above, the same reaction as in the case of natural diamond may be observed depending on the temperature conditions and/or the size and the shape of the stone. However, under the same condition(provided the stones are identical in the size and the shape and are under the same temperature condition), Level Meter ② lighting speed for measuring these stones (zircon and achromatic corundum) should differ substantially compared to that of natural diamonds. Thus, the stones can easily be distinguished if measured carefully.

Above zircon and achromatic corundum have definite characteristics such as follow. So, please refer to the below when measuring.

※ Since zircon has double refraction nature, when looking the table surface from directly above using a loupe, the ridge line (cut surface) of the pavilion (under the girdle) will show double lines. So, it is recognizable at a first glance.

※ Since achromatic corundum has refractive index of 1.770 ~ 1.762 which is respectably low compared to other simulants, the stone may look rather dull and the color may appear whitish. So, please be aware of doublets which blinds those defects. These doublets are made by bonding achromatic corundum as top part (crown ; part above the girdle) and strontium titanate as the bottom part (pavilion ; part below the girdle) using adhesive.

These doublets will glitter beautifully under the lighting, but unusual rainbow color which is not seen in natural diamond will appear and the bonded part can be observed if you look at the girdle part using loupe.

When measuring the doublets using Diamond Selector Ⅱ, Level Meter ② will indicate that the measurements on the top part (over the girdle) and the bottom part (under the girdle) will differ substantially.